

# 4 | Transportation Plan

A community's transportation system is vital to its ability to grow in a positive manner. Transportation is inherently linked to land use. The type of roadway dictates the use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. Many of the decisions regarding land uses and roadways within Waxahachie have already been made; three major highways run through the City, and local rights-of-way in much of the City have been constructed or planned. A major challenge for Waxahachie now lies in the accommodation of population growth within the existing transportation system and in the accommodation of new land development through the expansion of that system.

More specifically, the transportation system should:

- Provide mobility and accessibility at appropriate levels according to the type of roadway,
- Focus on multi-modal transportation options, including pedestrian/bicycle access and ultimately transit,
- Expand as needed to meet the needs of the City's growing population and additional development,
- Be economically feasible for the citizenry and the City, and
- Be correlated with regional considerations, such as new/expanded highway systems and transit availability.

It is important to note that the references made herein regarding the transportation system should not be viewed as references solely to roadways. Communities across Texas and the nation are becoming increasingly aware of the problems inherent in constructing a system for the automobile alone. Pedestrian and bicycle accommodations are important to creating a community that will be sustainable for decades to come. Therefore, another challenge for the City lies in the integration of pedestrian and bicycle facilities such that these facilities can create alternative modes of transportation.

This Transportation Plan is divided into several sections. First is a general discussion of the existing transportation conditions. Next is an explanation of thoroughfare planning, with the concepts of context-sensitive design (CSD) and Complete Streets outlined. Next is functional classifications, an explanation of the updated Transportation Plan Map, and a discussion of the non-motorized forms of transportation that should be considered by Waxahachie as the City continues to expand its transportation system; these modes will become increasingly important as the City and the region continue to grow in population and development. Next, the future rail corridor and strategies for transit-oriented development (TOD) are discussed. Finally, the transportation policies are outlined. These policies should be used in conjunction with the Transportation Plan Map to guide transportation decisions as Waxahachie continues to grow in population and geographic area.

## Existing Transportation Conditions

### Existing and Future Major Traffic Generators

Major traffic generators were identified and considered in reviewing the transportation system and developing this Transportation Plan. The predominant land use in Waxahachie is low-density residential development. As a result, Waxahachie experiences a heavy outbound traffic pattern in the morning peak hours and a heavy inbound traffic pattern in the evening. There is significant demand created by residents to reach the highways for their work commutes.

There are also trips made to local businesses, especially along 287 and SH-77. Local retail and commercial businesses are the main generators along these corridors. Light industrial and warehousing uses are also located along the IH-35E corridor, but these trips are generally heavier trucking and stay on the IH-35E and 287 corridors.

The recent construction of Baylor Scott & White Hospital along IH-35E is the source of many trips, which will continue to grow as the area around the hospital expands. The relocation of Waxahachie High School along the 287 bypass is also expected to be a major traffic generator in the western portion of the City.

### Existing Daily Traffic Volumes

IH-35E experiences the highest traffic volumes in Waxahachie. According to the TxDOT Annual Average Daily Traffic Counts shown in **Figure 15**, there are approximately 55,000 cars per day at the northern end of the City along IH-35E. Aside from regular interstate traffic, this can indicate that many Waxahachie residents are commuting to and from the Dallas area for work. Highway 287 has a wide-range of traffic counts from approximately 13,000 to 31,000 cars per day at various points.

### Accident History

As shown in **Table 13**, there have been 3,797 crashes in the City of Waxahachie that have been investigated by the Waxahachie Police Department from 2010 to 2015 (year-to-date). Of these crashes, 21 have been fatal. The highest year for crashes between 2010 and 2015 was 2014. 2015 is on track to be the year with the lowest number of crashes since 2011.

Table 13. Motor Vehicle Traffic Crashes (2010-2015 YTD)

Crash Year	Fatal Crashes	Incapacitating Crashes	Non-Incapacitating Crashes	Possible Injury Crashes	Non-Injury Crashes	Unknown Severity Crashes	Total Crashes
2010	2	24	68	133	323	6	556
2011	3	20	61	150	330	5	569
2012	2	30	83	133	421	5	674
2013	4	25	73	144	399	4	649
2014	7	37	72	156	474	13	759
2015 YTD	3	37	62	113	367	8	590
2010-2015 Total	21	173	419	829	2,314	41	3,797

Source: City of Waxahachie

### Planned Transportation Improvements

TxDOT has construction plans to widen the IH-35E from four lanes to six lanes. In addition to this upgrade, there will also be reconstruction of interchanges, ramps, and frontage roads. The interchanges slated for upgrades are Business US 287, US 287 Bypass, Lofland, and Butcher. The construction date is still being finalized at the time of this 2016 Comprehensive Plan Addendum. **Figure 14** shows the preliminary TxDOT plans for phase one and two improvements.

Figure 14. Phase 1 and 2 of IH-35E TxDOT Plans

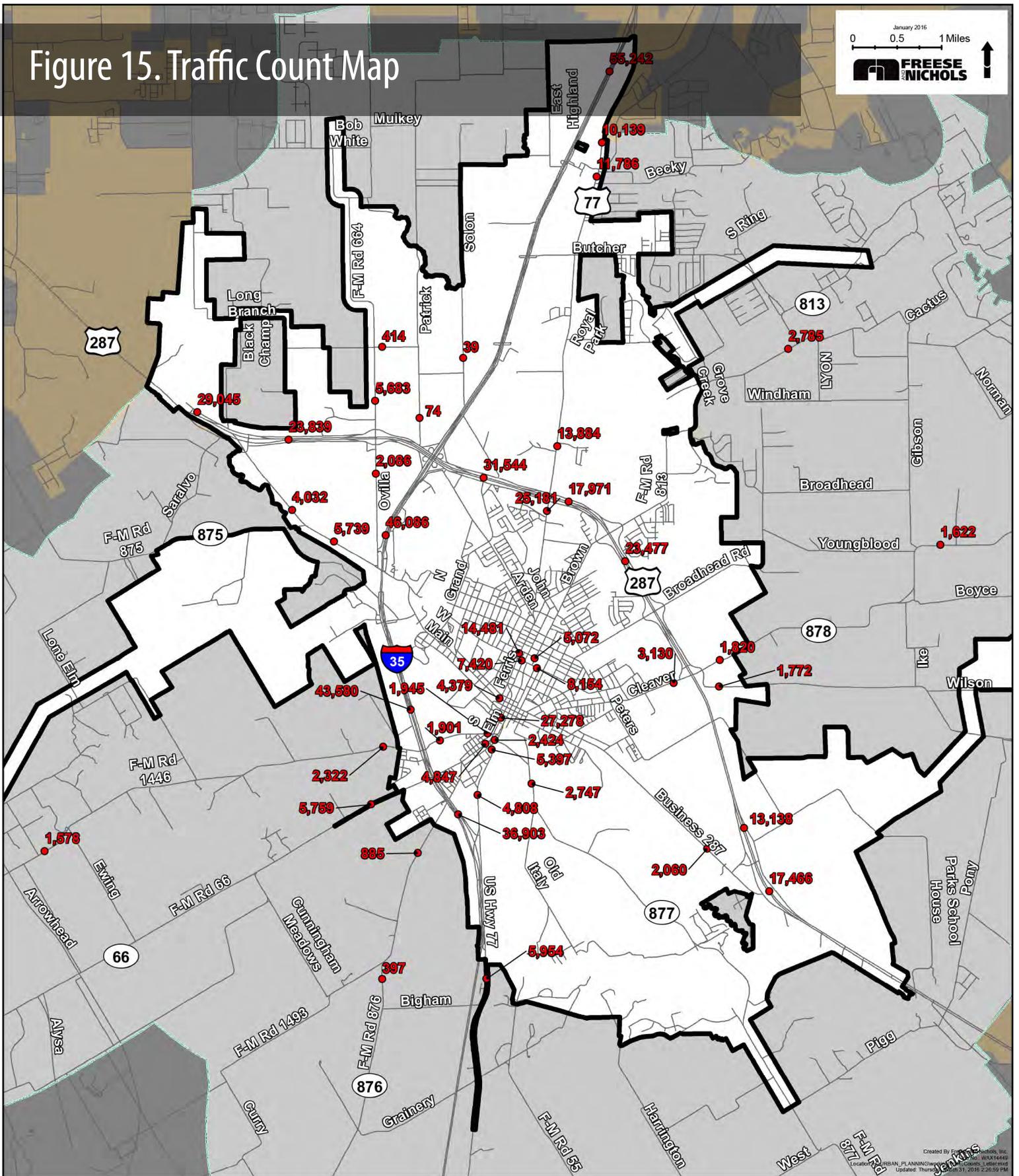
Phase I



Phase II



# Figure 15. Traffic Count Map



City of Waxahachie  
2016 Comprehensive Plan  
**Traffic Count Map**

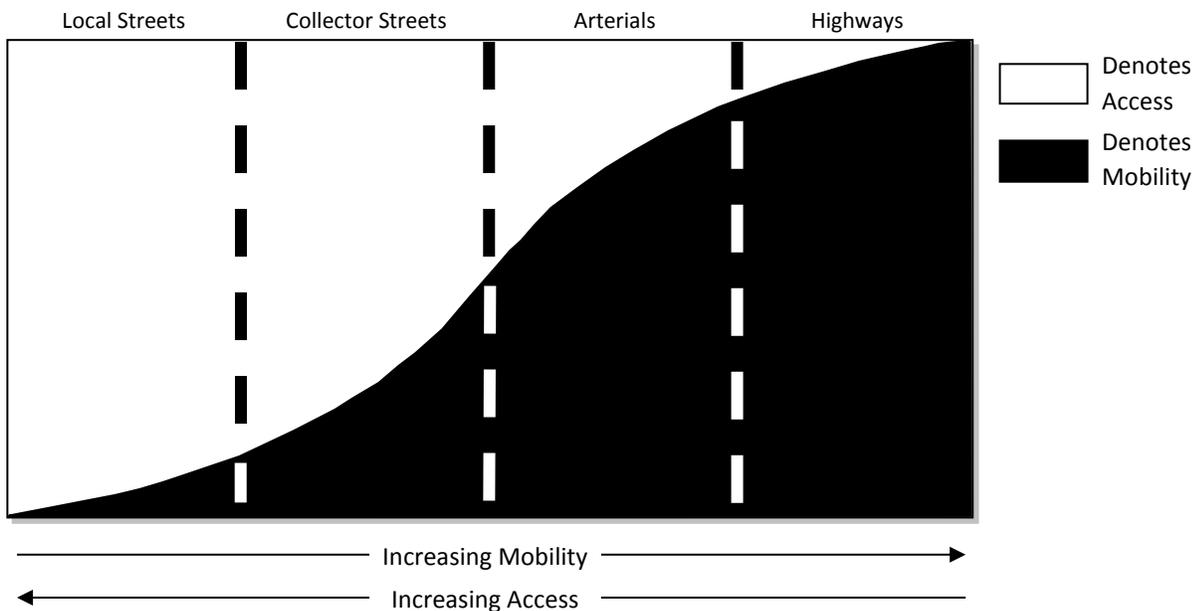
- Traffic Count Locations
- ⬛ Waxahachie City Limits
- ⬜ Waxahachie ETJ

Source: 2014 TxDOT Traffic Counts

## Functional Classification

Waxahachie's Thoroughfare Plan Map is based upon a classification system that depicts the function of every roadway in the thoroughfare system. Roadway types generally include highways, arterials, collectors, and local streets. Their functions can be differentiated by comparing their ability to provide mobility with their ability to provide access to various locations. These different functions of each roadway type are illustrated in **Figure 16**.

Figure 16. Functional Classification



As the illustration shows, access decreases as the thoroughfare type changes from local streets to highways, while mobility increases. It also shows that roadways that are intended to provide mobility, such as arterials and highways, should not be compromised by an abundance of separate access points for land uses. **Table 14** describes the roadway types shown in **Figure 16** in relation to various characteristics such as their respective continuity, distance spacing, intersection spacing, and on-street parking. This should be used as a general reference for the thoroughfare discussion within this chapter.

Table 14. Roadway Functional Classifications and General Planning Guidelines

Type of Roadway	Function	Approx. Spacing	Direct Land Access	Min. Roadway Intersection Spacing <sup>3</sup>	Speed Limit (MPD)	Parking	Comments
<b>Highways</b> (IH-35E, US 287)	Traffic movement	4 miles	No direct access, ideally	1 mile	60 to 70 MPH	None	Supplements capacity and major thoroughfare system; provides high-speed mobility
<b>Major Thoroughfares</b> (US 77, East and West Main, John Arden Drive)	Moderate distance inter-community traffic; Land access should be primarily at intersections	1/2 to 1 1/2 <sup>1</sup> miles	Restricted; some movements may be prohibited; Number and spacing of driveways controlled; May be limited to major generators on regional routes	1/8 mile (1/4 mile on regional route)	35 to 45 MPH	None	“Backbone” of the street system
<b>Secondary Thoroughfares &amp; Collectors</b> (East and West Ross Street, Bryson Street, Solon Road)	Collect/distribute traffic between local & major streets; Direct land access; Between major neighborhood traffic movement	1/4 to 1/2 <sup>2</sup> mile	Safety controls; limited regulation; Residential access prohibited; Commercial access allowed with shared driveways	300 feet	30 MPH	Limited	Through traffic should be discouraged
<b>Local Streets</b>	Direct land access; Pedestrians should be considered	As needed	Safety controls only	200 feet	30 MPH	Allowed	Through traffic should be discouraged

<sup>1</sup> Spacing determination should also include consideration of (travel projections within the area or corridor based upon) ultimate anticipated development.

<sup>2</sup> Denser spacing needed for commercial and high-density residential districts.

<sup>3</sup> Spacing and intersection design should be in accordance with state and local thoroughfare standards.

Source: North Central Texas Council of Governments

# Transportation Planning

## Context Sensitive Design (CSD)

The following discussion is about a somewhat different approach to thoroughfare planning than the approach that has generally been taken by communities in the past. Traditional thoroughfare planning is mainly focuses on providing optimal mobility and access for automobiles. Context sensitive thoroughfare planning considers automobiles, but also considers broader aspects related to roadways such as slowing down traffic in special areas, providing for better pedestrian access, and reflecting the character of the area being traveled through. The key concept behind CSD is that the elements of the street should complement the adjacent development; for instance, a roadway may need to be designed as a six-lane boulevard as it travels through a major retail area, but may need to be altered to a minor street configuration as it travels through a residential neighborhood.



### Process of Design

The process of designing CSD roadways is similar to the process of designing traditional thoroughfares in that automobile traffic is considered with traffic counts, traffic demand, and level of service information gathering efforts. However, the difference is that automobile traffic is only one element considered, among numerous others, in the design of CSD roadways. The Institute of Transportation Engineers (ITE) released a publication entitled “An ITE Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities.” This publication outlines various principles that should be considered during the design process to arrive at a solution for a context sensitive roadway project. These principles are as follows:

1. The project satisfies the purpose and needs as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.
2. The project is a safe facility for both the user and the community.
3. The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic and natural resource values of the area; in other words, exhibits context sensitive design.
4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people’s minds.
5. The project involves efficient and effective use of the resources (time, budget, and community) of all involved parties.
6. The project is designed and built with minimal disruption to the community.
7. The project is seen as having added lasting value to the community.

The City should explore the possibilities of CSD solutions on any of its joint projects with TxDOT (e.g., U.S. Highway 77). The new set of thoroughfare sections shown and discussed in the following section of this Transportation Plan have been established with due consideration of CSD concepts.

## Complete Streets

Complete Streets is a relatively new initiative that aims to maximize the utilization of public rights-of-way for all transportation users, regardless of age or ability. This method uses high-level policy direction to influence everyday decision-making processes in roadway design, rather than design prescription. Complete Streets is not about special projects, but about changing the approach to projects on all streets. It is an incremental approach aimed for long-term results. These policies utilize the entire right-of-way while focusing on safety, comfort, and convenience as well as cohesiveness with the context of the community. Complete Streets make it easier to cross the street, walk to shops, and bicycle to work, which in turn makes the City a better place to live.

### Public Benefits

Complete Streets improve safety, provide choices, reduce costs, and lead to better health and stronger economies. By considering the many different users of the roadway, streets can be designed to accommodate everyone and improve the livability of the community.

**Improve Safety** – Reduced travel speed which lowers risk to pedestrians and cyclists as well as including pedestrian infrastructure such as sidewalks, bicycle lanes, crossings, median islands, and curb extensions.

**Provide Choices** – By building safe, comfortable, and convenient infrastructure for other modes of transportation, residents are more willing to use them.

**Reduced Costs** – By reevaluating the needs of the residents and incorporating community input at the beginning of the project, the schedule, scope, and budget can often be reduced. Narrowing the pavement area will also reduce costs.

**Better Health** – With an aging population, older adults look to be more active. This demographic, along with kids and teens, cannot drive and look for pedestrian and bicycle facilities to become more active and independent.

**Stronger Economies** – Areas that provide safe and comfortable walkability have lower commercial vacancies and higher home and office space values.



### Economic Benefits

Complete Streets affect the local economy in various ways. By providing convenient alternatives to driving, such as transit, walking, or biking, residents and visitors save money on transportation costs which can then be used in other ways, such as housing, restaurants, and entertainment. Congestion costs can also be reduced if residents use alternative modes.

Local businesses see the benefits in improving access to people traveling by foot or bicycle. By increasing pedestrian and bicycle activity, businesses often see increased sales. Bicycle infrastructure can often create jobs directly through increased tourism, bicycle manufacturing, sales and repair, bike tours, and other activities.

Complete Streets also spur private investment by improving the public space and making it more pedestrian- and cyclist-friendly. By revitalizing parts of the community with pedestrian-only plazas, wider sidewalks, landscaping, and traffic calming, private investors are more willing to build or redevelop residential, retail, and office buildings. In addition to private investments, property values increase with the walkability of a neighborhood. Today's young adults, who comprise a workforce that can further add to economic growth, prefer walkable urban neighborhoods.

# Roadway Design

## Highways

Highways are defined as high-capacity thoroughfares along which direct access to property is generally minimal or eliminated altogether, with ingress and egress controlled by access ramps, interchanges and frontage roads. There are two major highways that traverse Waxahachie – Interstate Highway 35 and U.S. Highway 287. There is another highway, U.S. Highway 77 (also referred to as U.S. 77 and by various local street names), but it does not adhere to this definition because of the way it functions – that is, there is direct access to the land uses along U.S. 77. Construction and maintenance of State highways is not usually the responsibility of municipalities. The Texas Department of Transportation (TxDOT) and federal monies generally fund improvements of this type of roadway facility. However, maintenance and construction funding for many TxDOT projects have recently been reduced, requiring local entities to contribute to State projects. Also, local entities that are affected and impacted by improvements to highways often participate in decision-making and in the public input process.



## Local Roadways & Cross-Sections

Local roadways are the roads that most affect Waxahachie citizens on a daily basis. The various types of roadways are discussed below. **Table 15** shows updated design requirements for roadway cross-sections. The table was derived by making necessary adjustments to the previously recommended cross-sections from the 2007 Comprehensive Plan. The principal reason for updating cross-sections within this Transportation Plan is to integrate CSD concepts into the design of new roadways in Waxahachie – concepts like better integration of pedestrians and bicycles, and designing roadways for the desired speed. Also, it should be noted that the cross sections shown represent minimum requirements, and that there are other engineering-related requirements that are not represented here.

Table 15. Roadway Sections

Thoroughfare Name	2016 Comprehensive Plan						Design Speed (MPH)
	Type	ROW Width (feet)	Paving (feet)	# of Lanes	Median	Lane Width (feet)	
Major Thoroughfare	A	120	86-88	6	Yes	12	Above 50
Major Thoroughfare	B	110	80	4* (2 bike lanes)	Yes	12*	40-50
Major Thoroughfare	C	90	62	4	Yes	11-12	40-50
Secondary Thoroughfare	D	80	38-60	4	Yes/No	8-14	40-50
Collector Street	E	60-64	36-40	2 travel; 1 parking	No	8-18	40-50
Minor Street	F	54	30	2	No	15	30-40
Local Retail Street	R-1	74	38	2 travel; 2 parking	No	12; 8	25-35
Local Retail Street (Access Easement)	R-2	90	60	2 travel; 2 head-in parking	No	12; 18	35-35

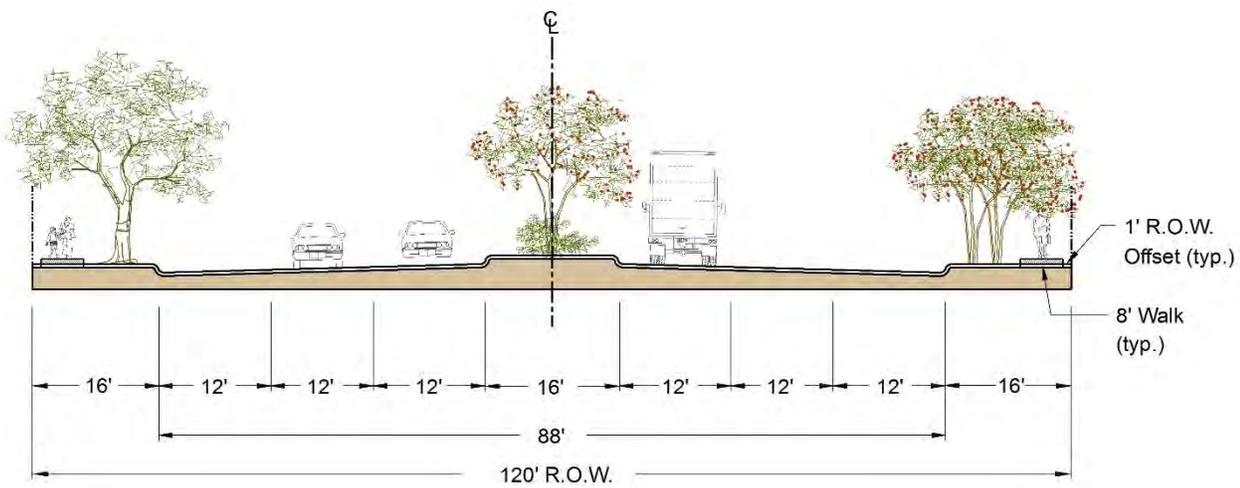
\*Expandable to six lanes at 11' each if bike lanes are removed.

## Major Thoroughfares

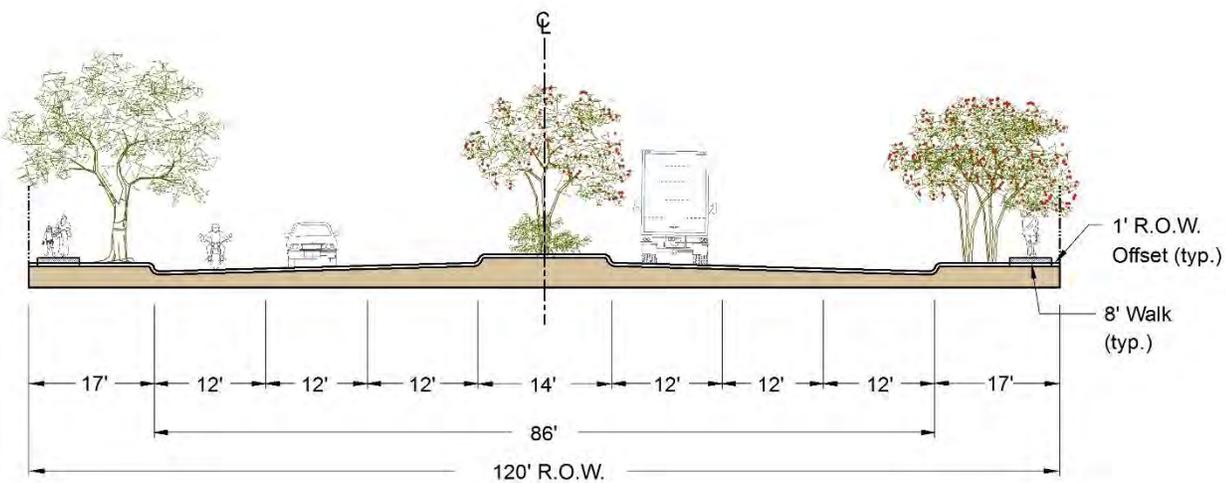
Roadways identified as arterials are designed to convey relatively heavy volumes of traffic. These roadways are primarily intended to provide mobility, and because of the speed and volume of traffic access to properties should be minimal. It should be noted that each major thoroughfare section has been recommended as a divided roadway with a raised center median. Raised medians are recommended for these roadways due to the increased level of safety and access control compared to a painted median. Raised medians also provide an area for streetscape enhancements such as lighting, landscaping, and special signage. Refer to **Figure 32**, for the recommended locations of new major thoroughfare roadways.

Thoroughfares with a Type A classification are six-lane roadways within a 120' ROW. These sections contain 12' travel lanes within a range of 86-88' of pavement. The parkways are large to provide ample room for 8' sidewalks with a buffer between sidewalks and the roadways. **Figure 17** and **Figure 18** provide two different configurations for Type A Thoroughfares.

**Figure 17. Type A-1 Major Thoroughfare**

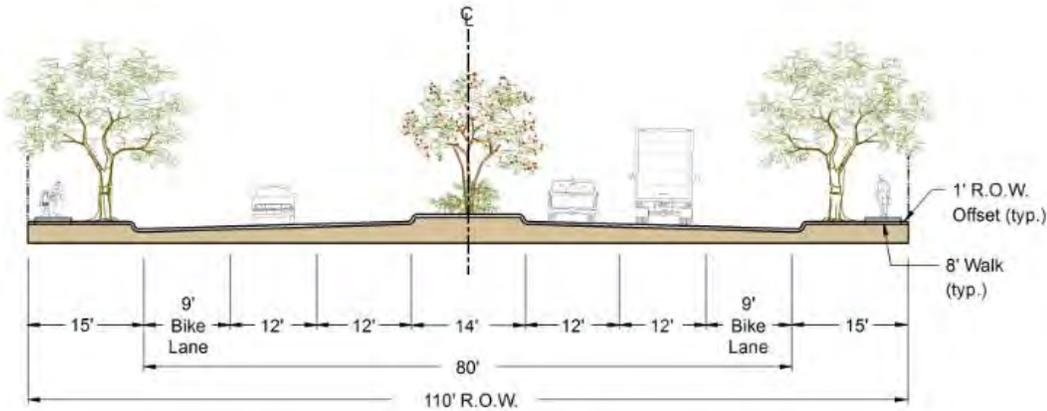


**Figure 18. Type A-2 Major Thoroughfare**



The major difference between the Type A-1 and Type A-2 Major Thoroughfare and the Type B Major Thoroughfare is the anticipated amount of large-truck traffic. The smaller lanes recommended in the Type B Thoroughfare are intended to accommodate less-intensive traffic. Type B Thoroughfares are to have six 12' travel lanes within a 110' ROW.

Figure 19. Type B Major Thoroughfare



The C-1 and C-2 major thoroughfares are comparable, but the lane widths in C-2 have been reduced. This will help keep travel speeds at the desired level of approximately 40 to 50 miles per hour. The rights-of-way are the same, and this leaves a couple of extra feet for easements to accommodate utilities and off-street sidewalks. For safety, sidewalks on this type of major thoroughfare should be setback from the roadway pavement, and there should be trees, landscaping, light posts, and/or bollards in between the sidewalk and the pavement. Sidewalks are represented within the major thoroughfare roadway cross sections since they are required according to the City's Subdivision Ordinance. Sidewalks are required to be at least eight feet wide along these roadways in relation to nonresidential developments.

Figure 20. Type C-1 Major Thoroughfare

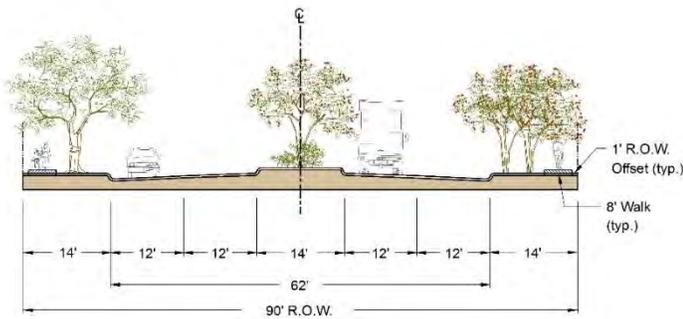
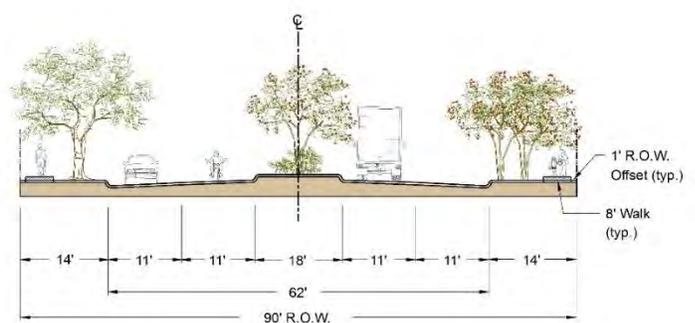


Figure 21. Type C-2 Major Thoroughfare

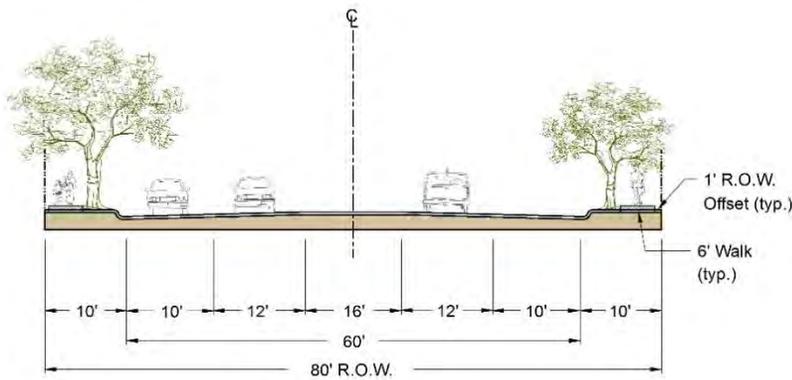


## Secondary Thoroughfares & Collector Streets

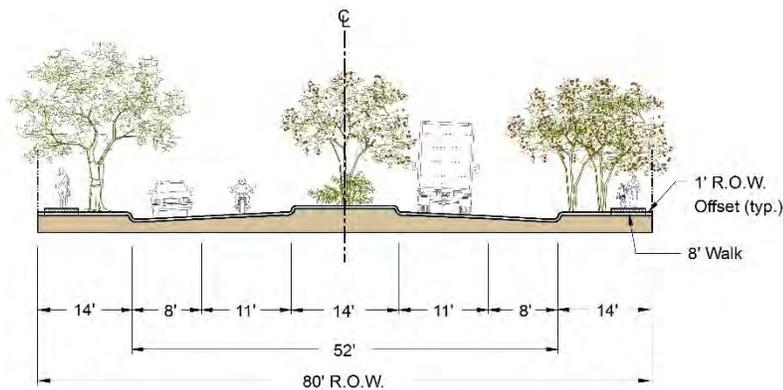
Secondary thoroughfares and collector streets are generally designed to distribute traffic from local access streets and funnel it to major thoroughfares (i.e., from residential developments). Secondary thoroughfares are intended to provide more mobility than collectors, and collectors are intended to provide more access than secondary thoroughfares. Collectors should provide access to adjacent land uses, but access should still be managed through the use of shared driveways and other techniques that minimize disturbance of the free-flow of traffic. These types of roadways should carry lighter volumes of traffic than major thoroughfares. Refer to **Figure 32** for the recommended locations of new secondary thoroughfares and collector streets.

A major difference between the D-1 and D-3 Secondary Thoroughfares is that the D-3 section has reduced lane widths that better relate to the usage of the lanes; this conforms to CSD concepts. The 11-foot lane widths will help travelers stay within the design speed of the roadway, between 40 and 50 miles per hour, and the 8-foot lane is wide enough for cars to park on either side of the travel lanes. Although there is a reduction of lane widths, the overall amount of right-of-way (80') has not been altered. Another difference is the D-1 cross-section has a continuous left-turn lane, while the D-3 cross-section has a median in place. D-1 also has a 10' lane that can temporarily be used for on-street parking until a future lane is desired.

**Figure 22. Type D-1 Secondary Thoroughfare**



**Figure 23. Type D-3 Secondary Thoroughfare**



The differences between the D-2 and D-4 cross-sections are the lane widths and the number of travel lanes. The lane widths for travel lanes in D-4 are 12 feet, and the parking lanes are wide enough in D-4 to become travel lanes. Similar to D-1, the D-2 cross-section also has a 10' lane that can temporarily be used for on-street parking until a future lane is desired.

The E-1 and E-3 Collector Street sections have the same lane widths, but E-3 has wider parkways. The 8-foot parking lanes and 6' sidewalks are in E-1 and E-3. The E-2 Collector Street shown in Figure 27 is consistent with the City's current regulations for this roadway type. The pavement width of this street allows for two travel lanes and for parking on one side of the roadway. The E-2 roadway should be used in residential or mixed use areas as an interior collector street.

Figure 24. Type D-2 Secondary Thoroughfare

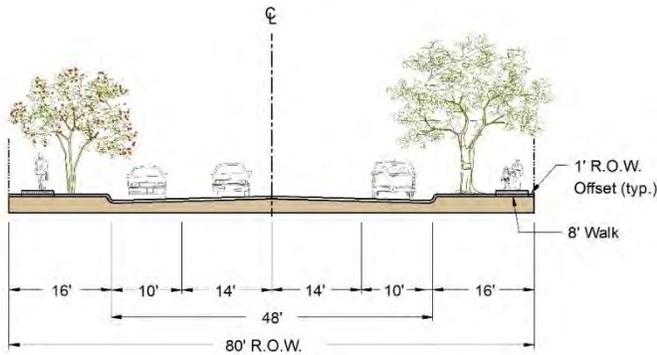


Figure 25. Type D-4 Secondary Thoroughfare

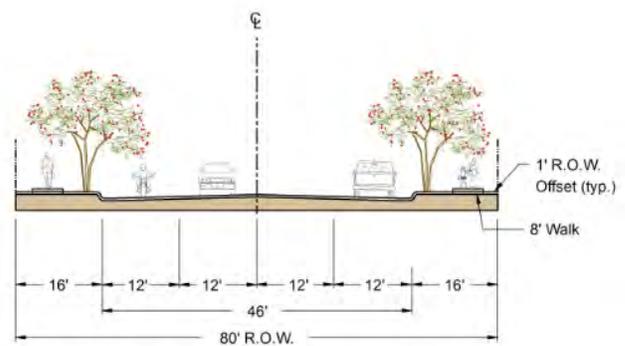


Figure 26. Type E-1 Collector Street

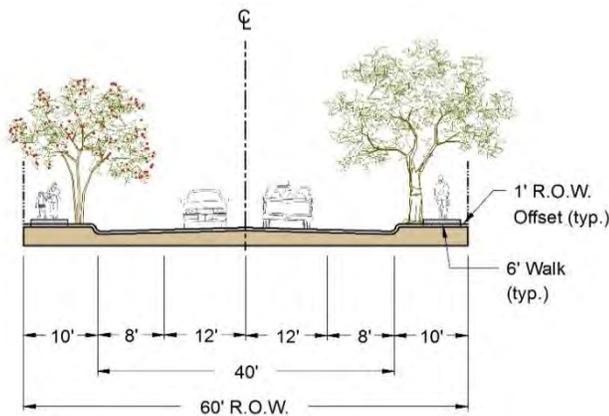


Figure 27. Type E-2 Collector Street

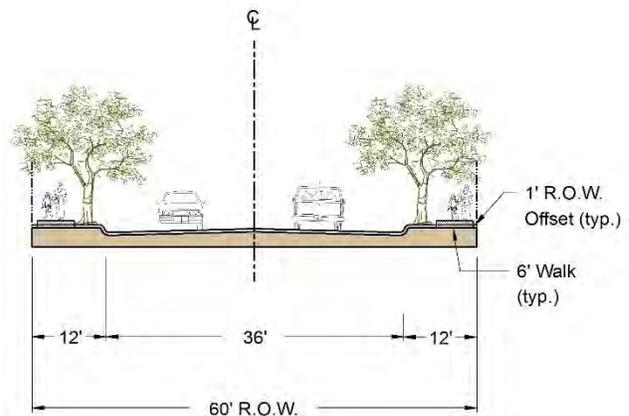
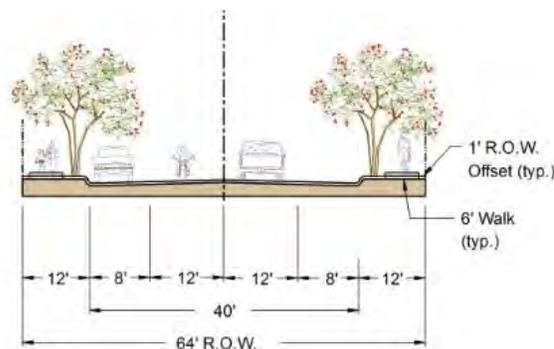


Figure 28. Type E-3 Collector Street

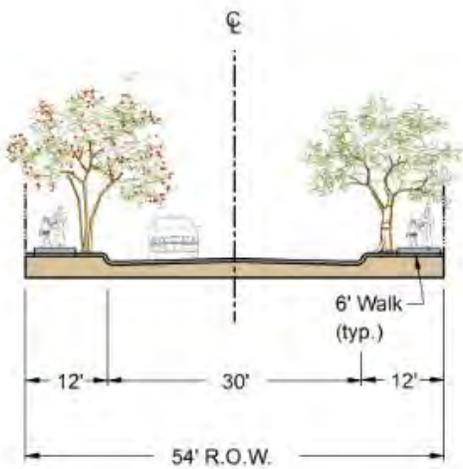


## Minor Streets

Whereas the principle objective of major thoroughfares is to provide mobility, the principle objective of minor streets is to provide access to adjacent properties. The mobility aspects of minor streets are secondary to accessibility. Due to the fact that minor streets are generally constructed within residential areas, safety is an important issue. To ensure that these roadways are not used a great deal for mobility purposes and to ensure their ability to provide access safely, minor streets should be configured to discourage through-traffic movement by using traffic calming elements such as offset intersections, curvilinear streets, discontinuous streets, and stop signs.

Minor streets are not shown on the Thoroughfare Plan Map, because decisions as to the locations of minor streets are usually made as development occurs; such decisions are heavily dependent on the type of development that is occurring and the need for connectivity to/with adjacent developments. The recommended minor street section is shown in **Figure 29**. A 30' pavement width is currently the minimum permitted. The 15' lanes include room for on-street parking; however, this will not be needed in all areas of a minor street. Additionally, a reduction to 27 to 28 feet should be considered in residential areas where alleys are provided. The F Minor Street should be used in residential or mixed use areas as an interior street that does not carry much traffic.

Figure 29. Type F Minor Street



## Retail-Related Streets

Retail-related streets are intended to place major focus on pedestrian concentration as well as increasing the quality of retail developments in terms of spatial considerations. The latter can be done by breaking up parking areas and placing buildings close to the pedestrian edge. These streets should be used in the interior areas of retail developments and are also appropriate within mixed use developments.

The R-1 Local Retail Street provides for two travel lanes with on-street parking lanes on either side. An 18' parkway is provided on both sides of the street for pedestrians, trees, street furniture, outdoor dining, etc. The R-2 Local Retail Street shown in **Figure 31** also provides for two travel lanes, but with head-in or angled parking instead of parallel. Again, there is ample room on either side of the street for pedestrian-focused elements. The R-2 Local Retail Street is for situations where retail faces a major roadway and some buffer or "teaser" parking is desired out front. This also provides for a public "browsing" lane for slower traffic without affecting major roadway capacity, and convenient parking close to the stores that would accommodate most off-peak demand.

Figure 30. Type R-1 Local Retail Street

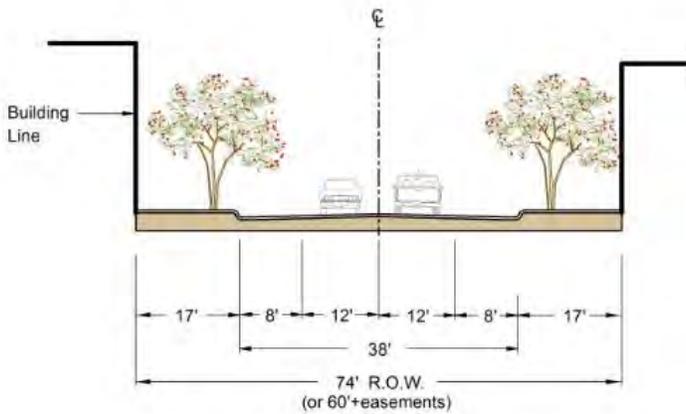
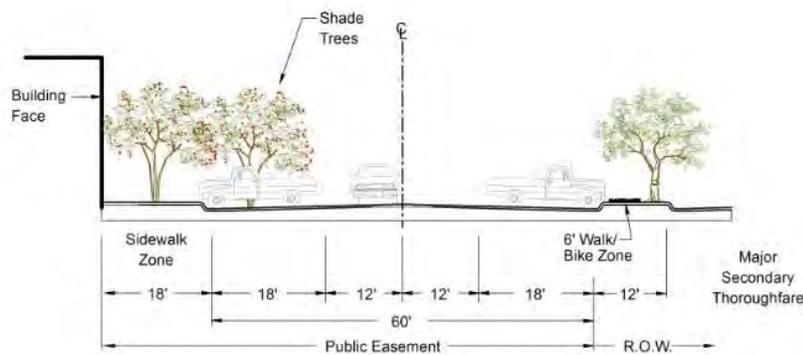


Figure 31. Type R-2 Local Retail Street (Access Easement)





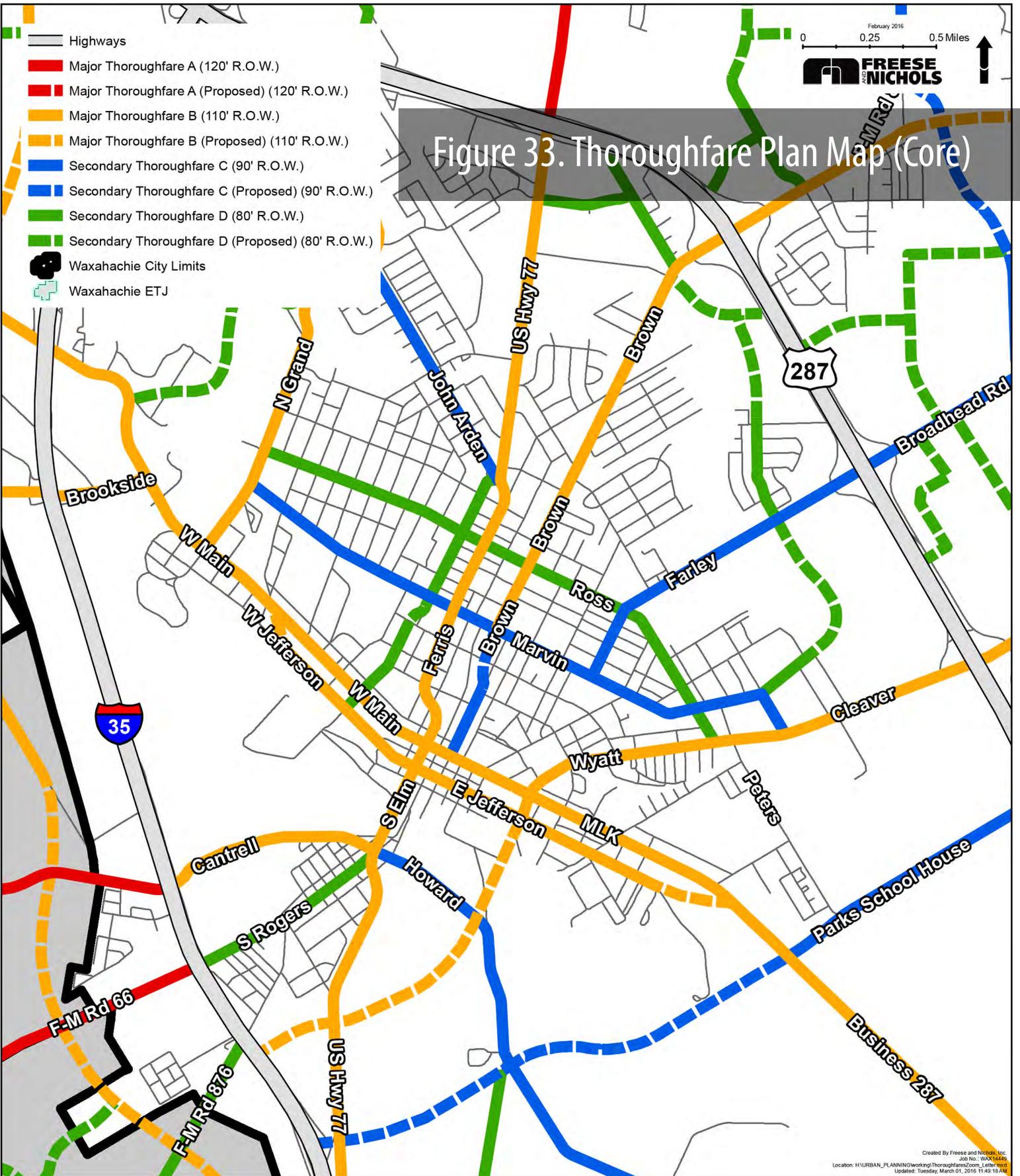


Figure 33. Thoroughfare Plan Map (Core)



City of Waxahachie  
 2016 Comprehensive Plan  
 Thoroughfare Plan (Core)

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## Alternative Transportation Opportunities

One of the objectives of this Transportation Plan is to provide an alternative to the automobile, specifically transit and pedestrian/bicycle modes. The major challenge to meeting this objective is forming concepts in a way that make such alternatives realistic and convenient for the citizens of Waxahachie to use. Transit and trail concepts, and why they should be proactively pursued are discussed below.

### Non-Motorized Forms of Transportation

A method to reduce the number of automobiles on the roadways in Waxahachie is to provide pedestrian and bicycle connections through the integration of on and off street trails. On-street trails are synonymous with “sidewalks”, and can be integrated along roads in a variety of ways. This would be more effective at reducing traffic locally than would a transit system, which is more focused on addressing regional transportation needs. Although some trails within Waxahachie should be more recreation-based, some trails need to provide connections between residential and nonresidential land uses to provide an alternative to the automobile. Areas such as residential neighborhoods, schools, retail areas, public areas, and the future transit stations should be pedestrian- and bicycle-friendly, and should feature on- and/or off-street trails for connectivity purposes. The City is currently experiencing a high level of development and related population growth. The time to consider the integration of a trail system throughout Waxahachie is now—when the City still has ample developable land to make trails a viable transportation alternative as development occurs. Retroactive integration of trails is much more challenging and costly than if the trails are completed at the time the initial development occurs.

Figure 34. Trail System Map

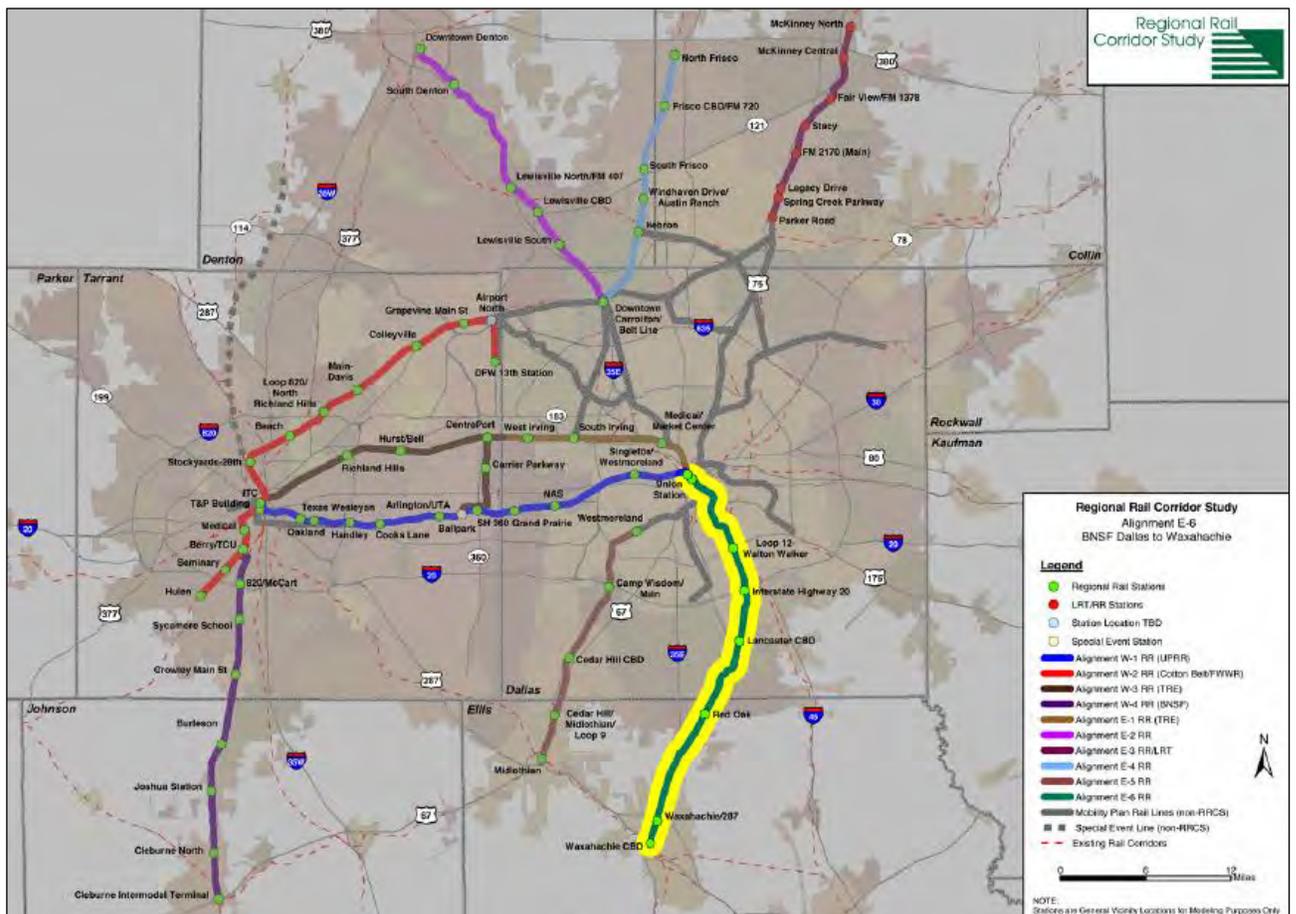


## Future Rail Corridor

The North Central Texas Council of Governments (NCTCOG) has identified a rail line that would run through the Waxahachie. The rail line is called Rail Corridor E-6. According to the NCTCOG Regional Rail Corridor Study, the corridor:

*“is one of eight freight rail corridors studied for the feasibility of implementing commuter rail, light rail, or other form of transit service. Corridor E-6 is a Burlington Northern and Santa Fe Railway (BNSF) line that extends between Dallas and Waxahachie, a distance of approximately 30.7 route miles. BNSF owns all of the right-of-way along the E-6 Corridor except for the 2.4 miles between Dallas Union Station and Forest Avenue in Dallas. Between Union Station and Forest Avenue, the Union Pacific Railroad owns and dispatches the track. Union Pacific (UP) also has trackage rights to serve local industries. The right-of-way is typically 100 feet in width. The current maximum operating speed limit is 40 mph for freight trains. The line is equipped with Automatic Block Signals (ABS) and is operated under Track Warrant Control (TWC) rules. A bridge and equipment weight restriction of a maximum gross weight per car of 143 tons is in effect over the corridor. Approximately four BNSF freight trains and two UP local trains operate over the line each day.”*

Figure 35. Regional Rail Corridor Study



Source: NCTCOG Regional Rail Study

## Transit Oriented Development

The term transit-oriented development (TOD) describes a mixture of land use types in a density sufficient to support the cost and ridership needs of transit, typically some type of rail transit (e.g., light rail, commuter rail, traditional trains). It is a concept that has evolved out of a need to balance residential communities, retail divisions and employment locations by integrating the transition between locations via the most efficient and accessible means. TOD has been defined as a set of urban design and land use characteristics conducive to generating non-automotive trip making. In addition to reducing vehicular dependence, TOD creates a sustainable environment through mixed land uses and pedestrian orientation.

A study examining TOD, prepared by Center for Transportation Training and Research at Texas Southern University, identified several successful design features to transit oriented development.

- Continuous and direct physical linkages between major activity centers; siting of buildings and complementary uses to minimize distances to transit stops.
- Street walls of ground-floor retail and varied building heights, textures, and facades that enhance the walking experience; siting commercial buildings near the edge of sidewalks.
- Integration of major commercial centers with the transit facility.
- Grid-like street patterns that allow many origins and destinations to be connected by foot; avoiding cul-de-sacs, serpentine streets, and other curvilinear arrangements that create circuitous walks and force buses to meander or retrace their paths; direct sight lines to transit stops.
- Minimizing off-street parking supplies; where land costs are high, tucking parking under buildings or placing it in peripheral structures; in other cases, siting parking at the rear of buildings instead of in front.
- Providing such pedestrian amenities as attractive landscaping, continuous and paved sidewalks, street furniture, urban art, screening of parking, building overhangs and weather protection, and safe street crossings.
- Convenient siting of transit shelters, benches, and route information.
- Creating public open spaces and pedestrian plazas that are convenient to transit.



The TOD area will be an asset to Waxahachie for three main reasons. The first reason is because the mix of land uses generally associated with a TOD area are consistent with the land uses envisioned for the downtown Waxahachie area. However, a higher density needs to occur to support transit. Secondly, it is important because of the location near the center of town. This proximity will create a mutually beneficial relationship between the TOD and the existing land use, making them stronger together and more of a destination than they would be on their own. Third, people may be more inclined to visit or live within the downtown area if they can use transit to travel to other regional destinations.

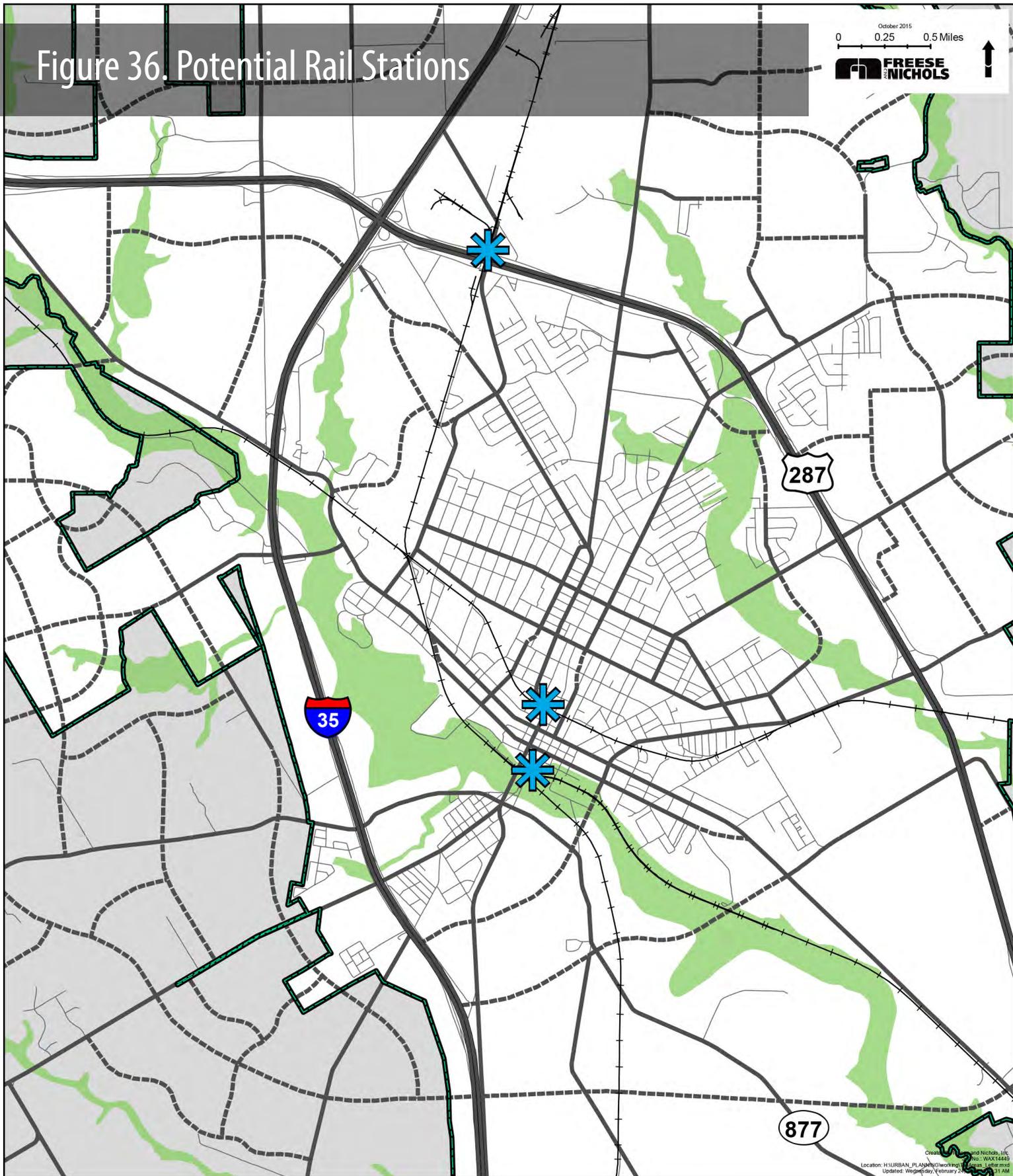
**Location** – The location of the TOD area is ultimately dependent on the location of Waxahachie’s transit rail station, which is flexible based on conditions such as property ownership, topography/environmental concerns, and the transit entity’s preferred location, among others. The chosen location has been determined based on a regional rail planning effort by the NCTCOG. If the location changes in the future, the TOD area should be located accordingly, adjacent to the transit stop.

**Density** – The TOD area needs to be high density, both residential and nonresidential, in order to help support the transit. Therefore, for residential uses, this area should have a minimum density of 25 units per acre, and it should be higher if possible.

**Character** – The TOD area needs to have a definable character. For example, Mockingbird Station in Dallas has a very modern feel, while Plano’s Downtown Station has more of a Main Street feel. The choice of character needs to be made, then followed through with the design of the station and related amenities (e.g., public art, paving).



# Figure 36. Potential Rail Stations



City of Waxahachie  
2016 Comprehensive Plan  
**Potential Rail Stations**

-  Potential Rail Stations
-  1-Percent Flood Risk Zones (FEMA)
-  Waxahachie City Limits
-  Waxahachie ETJ

# Transportation Policies

## 1. Consider Context-Sensitive Design (CSD) solutions for new roadways & roadway improvements

West Side of IH-35E IH-35E Rebuild Mid-Way Airport Growth Strategies Trail Connections Medical Center District **Roadways**

Ensure that automobile transportation is not the sole consideration when new roadways are constructed and when existing roadways are improved by integrating CSD solutions into the decision-making process.

- Design roadways for the automobile speed that is desired. Common roadway aspects that can achieve desired speeds include lane widths, overall street width, on-street parking, and the radii of intersection turns.
- Enhance the environment of roadways where walking and biking is desired. Such enhancements could include benches, trees (for shading), lighting, and elements that create interest such as public art and small gathering spaces.
- Work with TxDOT to incorporate CSD solutions on any joint projects between TxDOT and the City (e.g., U.S. Highway 77).

## 2. Ensure coordination between the Transportation Plan and the Future Land Use Plan

West Side of IH-35E IH-35E Rebuild Mid-Way Airport Growth Strategies Trail Connections Medical Center District **Roadways**

As changes are made to the Future Land Use Plan Map, changes may need to be reflectively changed in relation to the Thoroughfare Plan Map.

- Consider the placement of new developments in relation to roadway types.
- Consider existing development as roadway improvements are made.
- Secure rights-of-way as development occurs.

## 3. Use positive aesthetics along roadways to enhance Waxahachie's character

West Side of IH-35E IH-35E Rebuild Mid-Way Airport Growth Strategies Trail Connections Medical Center District **Roadways**

The image of Waxahachie that people encounter while traveling to and through the City is extremely important – this image will affect the way the City is perceived.

- Take proactive measures to ensure that this image is positive through signage, gateways, lighting, streetscapes, sidewalks, landscaping, and building materials.

## 4. Proactively pursue improvement of the U.S. 77 corridor

West Side of IH-35E IH-35E Rebuild Mid-Way Airport Growth Strategies Trail Connections Medical Center District **Roadways**

In a process that is paralleling this comprehensive planning process, an analysis of the functioning of U.S. 77 is being conducted. Aspects of this roadway being analyzed include traffic progression through signalized intersections, traffic counts at the PM peak hour, access issues, and safety issues. The findings of this study will:

- Update the U.S. 77 Corridor Study to include the area north of the 287 bypass.
- Ensure that decisions that are made, especially with respect to widening this corridor, consider CSD solutions. Land adjacent to U.S. 77 is heavily developed, and therefore CSD solutions will be extremely important to the sustainability of this adjacent development.

## 5. Design for shared access and cross access

West Side of IH-35E IH-35E Rebuild Mid-Way Airport Growth Strategies Trail Connections Medical Center District **Roadways**

Require new nonresidential developments along major thoroughfares and collector roadways to establish shared access driveways and cross access with adjacent development.

- New nonresidential developments should be required to share the driveway of the adjacent development, if possible (i.e., if the driveway is positioned near the lot line/setback line of the lot that is being developed).
- New nonresidential developments should be required to make provision for sharing their driveway with the adjacent development in the future, if the adjacent lot is not yet developed.
- New nonresidential developments that require more than one driveway by current regulations should construct that driveway at least one driveway such that it is or can be shared.
- New developments should be required to provide access to adjacent development through an internal driveway.
- If adjacent development has not yet occurred, provision for future cross access should be made.

## 6. Offer viable pedestrian & bicycle transportation choices

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections Medical Center District Roadways

Integration of pedestrian and bicycle access should be coordinated with the existing bike and pedestrian plan.

- Require new residential developments and nonresidential developments of all types (where possible) to make provision for pedestrians and bicyclists, including access to and through the development.
- Construct sidewalks alongside all new or improved roadways. However, these on-street sidewalks should not be the only type of pedestrian/bicycle access provided. Off-street trails should also be actively established.
- Consider aspects related to the design of developments that help increase pedestrian and bicycle usage. Such aspects include providing continuous sidewalks or trails, creating short blocks, and providing a safe pedestrian/bicycle environment with clearly identified crosswalks and bicycle lanes.
- Refer to the Parks Master Plan for more detail about trail integration within Waxahachie.
- Consider and evaluate areas to add bike lanes to existing roadways by using paint. This method is cost-effective and would allow the residents to become comfortable sharing the roads with cyclists.

## 7. Continue to strategically plan for trail connections to all major destinations in the City

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections Medical Center District Roadways

The trail system should allow residents and visitors to freely move throughout the City without the use of an automobile. Ensure that the following destinations are connected via sidewalks, trails, bike lanes, etc.

- Downtown
- Medical Center District
- Schools
- Parks
- Lake Waxahachie
- Major Retail Anchors



## 8. Monitor the progression of regional transit

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections **Medical Center District** Roadways

Work with the North Central Texas Council of Governments (NCTCOG) and area transit agencies to ensure that the potential rail stops identified in this plan are left as placeholders for future regional rail. This will allow Waxahachie to have a seat at the table when the time is right for regional rail within Ellis County.

- Ensure that current ownership of railroad rights-of-way by public entities is maintained to allow regional transit to be established more easily and in a less costly manner.
- Work with private entities that currently have ownership of railroad rights-of-way.
- Proactively plan for regional rail by ensuring that locations planned for transit stops have an appropriate amount of retail, employment, and residential density developed and/or permitted in order to support transit. Within Waxahachie, there are two rail stations currently proposed by the NCTCOG. Transit-oriented development should be encouraged within proximity to these locations.

## 9. Investigate the feasibility of internal transit within the City

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections Medical Center District Roadways

Explore the potential for future localized transit within Waxahachie. The Downtown area is perhaps the most viable location to center a transit system around. Other key locations that local transit could serve include regional transit stops, Downtown, local higher education venues, the medical center district, and new mixed use developments. Ensure that a local transit system achieves the following:

- Effectively connect various areas of the City,
- Effectively connect the regional rail stations, and
- Be unique in its design, thereby providing Waxahachie with a recognizable City element.

## 10. Ensure transit options are safe & well-designed

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections Medical Center District Roadways

One key way to increase the use of transit is to design transit stops to be safe and inviting. The design of transit stops may differ based on the type of transit provided, but the following general concepts should be considered as stops are designed.

- Provide pedestrian and bicycle connections to transit stops.
- Provide shelters at transit stops to protect users from weather elements (rain, sun, wind etc.) to the furthest extent possible.
- Provide benches and signage that provide a welcoming environment.
- Ensure that transit stops along roadways are located such that transit users are protected from automobile traffic through setbacks, tree placement, balusters, etc.

## 11. Continue to work with state, county, & regional planning agencies

West Side of IH-35E **IH-35E Rebuild** Mid-Way Airport **Growth Strategies** Trail Connections **Medical Center District** **Roadways**

The City should ensure that it has active participation and representation in making decisions about roadway infrastructure in the region. Coordination with the following agencies is important for Waxahachie's future:

- NCTCOG
- Ellis County
- Waxahachie ISD
- TxDOT

## 12. Evaluate the feasibility of a roundabout on Elm Street to increase mobility

West Side of IH-35E IH-35E Rebuild Mid-Way Airport **Growth Strategies** Trail Connections Medical Center District **Roadways**

The addition of a roundabout on Elm Street (between Howard Road and South Rogers Street) would increase access to South Rogers and Cantrell Street. Adding a roundabout would provide a safe flow of traffic and allow more access to Elm Street. With the addition of the access to South Rogers, the downtown area will be easily accessible to visitors. The new roadway connecting the roundabout to Cantrell Street would create an opportunity for more non-residential development to occur on the outer edges of downtown Waxahachie, which could help to revitalize the area. A conceptual drawing for the roundabout is shown below.

